THE EDUCATOR.

"Promote, then, as an object of primary importance, institutions for the general diffusion of knowledge."—WASHINGTON.

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From "Chamber's Educational Course" commenced three years since in Edinburgh, we propose to present an occasional extract. The Extract now given is from the first Tract of the Series, "On Infant Education from two to six years." All who have charge of little children may profit by the following, although infant schools can exist only in a dense population.

ORIGIN OF INFANT EDUCATION.

The systematic training and instruction of infants had an origin not much removed from the character of accidental in some circumstances connected with the celebrated manufactory at New Lanark, in Scotland, at the time under the management of Mr. Robert Owen. It was found that when the married women employed in this establishment had young children, their attendance was very irregular, and that consequently much annoyance, and even loss, was experienced. After every other effort to remedy the inconvenience had failed, Mr. Owen projected a plan for concentrating the labor of attending to all the infants of a certain age, by bringing them, during work hours, into one apartment, where a single woman watched them at play, while the rest followed their usual avocations. In a little time it was found necessary to furnish some general means of amusement to this juvenile congregation, and pictures were hung upon the walls, toys distributed, and eventually a fiddle brought into play; for the purpose of setting the children a dancing. Still farther to fill up the time, the superintendent began to teach the alphabet; when it was discovered that there was much less difference of aptitude in learning the letters, in children of different ages, than had been previously supposed. A little, and yet a little more, was taught with the like success, till it was thought worth while to put the whole under the charge of a male teacher, assisted by the original nurse. Mr. Buchanan, an individual combining many excellent qualifications for the purpose, reiceved this appointment, and was accordingly the first to practise a profession which seems destined to confer the greatest benefits upon mandkind. Under his care, the system rapidly advanced. Much real as well as valuable knowledge was imparted; exercise, both within and without doors was duly attended to; and the children seemed at once to increase in mental and bodily health. For moral training, little was yet *systematically* done: kindness, truth, and honesty, in the intercourse of the young people, were inculcated, and, as far as practicable, enforced; but the moral system, which has since been brought into a practical form, was then but imperfectly realized.

In the year 1816, New Lanark was visited by a party of statesmen, amongst whom were the Marquiss of Lansdowne, Mr. (now Lord) Brougham, Mr. Smith, M. P. for Norwich, and Mr. Mill of the India House. Being conducted to the infant school, they were much struck by the novelty of the system, and not less impressed by a sense of its great capabilities, as a means of elevating the physical, moral, and intellectual condition of human beings. The formation of a Society for Promoting Infant Education, and the establishment of a Model Infant School at Brewer's Green, Tothillfields, London, were the consequences; and Mr. Buchannan was translated from New Lanark, with the approbation of Mr. Owen, to take charge of this more important seminary. A locality was soon after chosen for another infant school in Spittalfields; and, as it was impossible to obtain a teacher already qualified, Mr. Buchannan was requested to look out for a person capable of being taught the art, and likely when taught to practice it with effect. This gentleman knew well how peculiar a range of qualifications, moral as well as intellectual, was required in an infant teacher; how indispensable, above all things, was that benevolent enthusiasm, without which an infant school flags and expires; and he therefore requested time to perform the duty imposed upon him. He at length recollected that his school had been visited by a young man named Wilderspin, who was in a counting-house in the city, and who seemed to differ from all other visiters in the intensity of the interest which he took in what was going on, his ready appreciation of the value of the system, and the great delight he displayed in witnessing the improvement and happiness of the infants. Mr. Buchanan promised to sound Mr. Wilderspin as to his views in life, and to ascertain whether he might be induced to embark in the profession of an infant school teacher, and begin with the Spittalfields school. Mr. Wilderspin, when the scheme was proposed to him, requested some days to reflect upon it, as his acceptance, if it should take place, would be no light choice, but a pledge of the devotion of his life to the pursuit. He made up his mind and presented himself to Mr. Buchannan, declared himself ready to embark in the enterprise with every energy which he possessed. After benefitting by all the aid which he could receive from Mr. Buchannan, Mr. Wilderspin was in due course appointed to the Spittalfields school.

PRINCIPLES OF INFANT EDUCATION.

First, As the feelings or affections of human nature, in common speech termed the *dispositions*, furnish the impulses, according to their direction to virtue or vice, it is important to address education directly to these feelings, as well as to the intellectual faculties. *Secondly*, The dispositions being capable of direction either to good or evil, from the very first commencement of their manifestations, and being then, indeed, at their greatest degree of pliability, it is of importance that the education of the dispositions should commence as nearly with the commencement of their manifestations as may be convenient. *Thirdly*, Mere *precept* will not establish, either in infancy or at any other period of life, those moral habits which flow from well-regulated dispositions. *Example*, though it may be a good auxiliary, is apt to operate transiently, leaving the mind that has been swayed by it liable to the influence of example in any other direction. *Exercise, confirmed into habit*, is the true means of establishing the human character, as far as it is to be established by human means. And how is this to be best carried into practice? That it may be realized to a certain extent in families, is true; but, as most of the familes are situated, it can only be so in very rare instances. The general result of home training is the neglect of moral culture at the time when it is most valuable, and the acquisition of every bad habit from yet more neglected companions. It is evidently necesssary that children should be placed, as early as convenient, under the influence of a *system* which, without imposing any painful restraint or burden, will ensure their being properly trained. Their being so collected, is incidentally advantageous, in as far as it is only in the state of a community that they can receive much of that culture of the dispositions which is required. Gathered into a place fitted up for the purpose, and under the eye of well-trained instructors, a considerable number of infants form a society of equals, or a larger kind of family, in which the selfish feelings may be regulated, and the social strengthened and improved: in which the *practice* may be rendered habitual of cleanliness, delicacy, refinement, good temper, gentleness, kindness honesty, justice, and truth: confirming good tendencies in the mind, and lead-

ing to virtue in the conduct,—at the same time that the body is strengthened by a judicious use of air and exercise. *Fourthly*, It is believed that the best preparation may be thus made for the reception of the precepts and spirit of Christianity. *Fifthly*, Intellectual instruction, though of secondary importance, should form, nevertheless—provided it be of kinds calculated to interest and amuse, and never to overtask—an important object in an infant school. As most suitable for the infant mind, the earliest lessons should chiefly refer to *real objects*, of which the properties and uses may be explained, so as to impart many new and useful ideas; to which end, the objects themselves, or lively pictures of them, should be, if possible, presented. The letters of the alphabet, which are also objects, may be learned at this early period; but care ought to be taken not to press the pupils too rapidly into the intricacies of printed language, which, being emblems or signs for ideas, obviously require a more advanced state of the faculties.

Evidence taken before the Select committee of the British House of Commons, on the state of Education—June, 1834.

Evidence of Rev. James Carlisle.

What situation do you hold in the Board of Commissioners for Education in Ireland?—I am one of the Commissioners.

Have the goodness to state who are the other commissioners?—The chairman of the board is the Duke of Leinster, the Archbishop of Dublin, Dr. Murray, Roman Catholic Archbishop of Dublin, Dr. Sadlier, Mr. Blake, the chief remembrancer, Mr. Robert Holmes, a barrister, and myself.

Is it a part of the business of the board to provide or approve of masters for the schools in the country?—We only approve of them in the mean time, as we have not been able to do any thing towards providing them; but we require certificates of their fitness, and it is in contemplation, according to the letter which has been addressed to us, when we are able to do so, to examine them, that we may be able to form a more perfect opinion of their qualifications from our own knowledge of them. There have been also two classes brought up from the country of about twenty each, to receive instruction, who have been under teaching about three months each class.

Have they been under teaching at your own school in Dublin?—Yes.

Does it appear to you that it would be advisable if possible to train masters for a considerably longer period than three months?—I should think it quite indispensable to the well-being of the system to do so. In Ireland the school masters for the poor are of a very inferior description indeed, particularly in regard to general intelligence.

Have you formed any estimate, either yourself or in conjunction with other members of the board, of what time it would be desirable to keep schoolmasters under training?—We agreed to a recommendation upon that subject, which was submitted to government, in which the board were unanimous. It is as follows: "All students entering these academies for the purpose of becoming teachers under the national system, to be examined on an entrance course. They should be required to study in the academy at least two full years; during which time they should receive instruction, not merely in the different branches of knowledge specified, but be practised in teaching in the model school."

Does the board mention the age at which the persons intended for schoolmasters should enter?—Their recommendation is, that the entrance examination should not be recieved till the student is at least 18 years of age.

Does it appear to you, speaking generally without reference to the peculiar circumstances of Ireland, that it would be a great benefit to England or any other country in Europe, to have a set of schoolmasters well trained, and who could be sufficiently guaranteed to the country as good schoolmasters?—I should conceive very highly so, for any country whatever.

Are you of opinion that it is necessary, in order to ascertain whether they will fulfil the purpose for which they are intended, that they should have some practice in teaching at a considerable school before they go out?—Yes, that is the opinion of the board; they have recommended that measure, namely, to have model schools connected with the academies for training masters, where they can be instructed in the art of teaching. When I spoke of training, I included education generally; the Kildare-place Society did not educate but merely trained the teachers to conduct schools; but what we conceive to be peculiarly important is, that they should be educated as well as trained.

When you say that they should be educated, you mean a considerable portion of knowledge should be imparted to them before they set out as schoolmasters?—Yes, the improvements that have been introduced laterly into education, particularly in Scotland, require a considerable degree of education to enable the schoolmasters to carry them into practice. Every subject brought forward in the reading lessons must be explained, and the master is expected to be able to answer the questions that the children may put to him, and that he cannot do without considerable information.

Are you of opinion that by the Scottish method you have mentioned a great improvement has been made on the old system of instruction principally by teaching the boys to exercise their own minds?—I think a very great improvement indeed.

Has that system been adopted in your own model school in Dublin?—It has, as far as we have been able hitherto to adopt it. We had no books at first adapted to that system of teaching; we have been gradually accumulating books, the chief object of which is to convey information on various subjects, while the children are learning to read, and we have in our model school pursued that system of instruction.

Can you describe to the committee the process which was gone through with respect to those whom you have trained as schoolmasters?—The head master went through our reading books with them, explaining the different subjects which occurred in these books. They were also exercised in reading, English grammar, arithmetic, book-keeping and mathematical sciences; they were from time to time taken into the school to learn the mode of teaching recommended by the board, and were also exercised in teaching classes themselves from time to time."

Evidence of Mr. Henry Dunn.

Are you Secretary to the British and Foreign School Society?—I am.

How long have you held that situation?—About four years.

Were you before that time connected with the society?—One year before that time.

Have you an establishment for preparing schoolmasters for the duty of teaching in the central school in the Borough-road?—We have.

Can you tell how many there are on the average who are usually in the school with that view?—There are 20 at this time training for boys' schools, and 9 or10 for girls' schools; during the last year 98 were trained.

Was that an increase upon the number of the former year?—A very considerably increase; I think the highest number, previous to the last year, was 62 or 63.

What is the usual age at which young men are received, who are to be taught as schoolmasters?—From 19 to 23 or 24, is about the age that we prefer. In some cases we take them a little earlier, and in others, when they are much older, but we prefer to have them between the age of 19 and 24, because we consider that by that time the character is formed, and they are not yet too old to learn a new system, or to comform to any plan laid down for their guidance.

Are they generally persons who have been originally destined for the profession of schoolmasters, or are they persons from other walks in life, who from circumstances, have adopted that profession? A very small number indeed have been trained in our own schools; these we consider to make the best masters; the second class are those who have kept private schools, and we generally find them to make the worst masters; the greater part are young men who have been employed as mechanics, but who have evinced a taste for teaching, and a desire to benefit their poorer neighbours by being actively engaged in Sunday schools.

How long do they generally remain in your central school in the course of preparation for schoolmasters?—The time which we fix as a minimum is three months; but of late we have found it exceedingly difficult to retain them so long, on account of the number of applications we receive for teachers. We think three years nearer the time they ought to remain than three months, but we do the best we can under the circumstances.

Do you conceive that there would be any advantage supposing your funds enabled you to do it, in preparing young men from the age of 14 or 15, and keeping them in your establishment till they were of a fit age and competency to act as schoolmasters?—I think that 14 or 15 would be somewhat too young; at that age it is not easy to ascertain what the character of the individual may be. We have in some instances been greatly disappointed with youths selected from our own schools by their being taken so early; we have found that at 19 or 20 years of age the young man has been induced to follow some more lucrative profession, or he has shewn those dispositions which have rendered him unfit for the management of a school, although likely to prove a valuable member of society in some other department. We therefore think that from 18 to one or two and twenty would be better than from 14 to 17 or 18.

Is it the opinion of the committee that if young men of the age of 18 could be admitted upon the establishment and could be retained till the age of 21, a better class of schoolmasters than you can

now afford would be afforded to the country?—Very much indeed.

What is the nature of the tuition that is now given to those who are to act as schoolmasters?—They are required to rise every morning at five o'clock, and spend an hour before seven in private study. They have access to a good library. At seven they are assembled together in a bible class and questioned as to their knowledge of the scriptures; from nine to twelve they are employed as monitors in the school, learning to communicate that which they already know; from two to five they are employed in a similar way; and from five to seven they are engaged under a master who instructs them in arithmetic and the elements of geometry, geography and the globes, or in any other branches in which they may be deficient. The remainder of the evening is generally occupied in preparing exercises for the subsequent day. Our object is to keep them incessantly employed from five in the morning until nine or ten at night. We have rather exceeded in the time devoted to study the limit we would choose, on account of the very short period we are able to keep them, and we have found in some instances that their health has suffered on account of their having been previously quite unaccustomed to mental occupations.

Are many of them obliged to leave the school from proving incompetent to the tasks which are assigned them?—Comparatively few who are once admitted, because we take them in the first instance for a fortnight on trial; experience enables us to form a tolerably correct judgment as to a young man's capabilities after we have seen him teaching in school for a fortnight; we can then generally judge whether he has the elements of a teacher in him.

Do you think it desirable that the public should contribute to the establishment of the nature of yours, for the purpose of furnishing competent schoolmasters to different parts of the country?—Yes; I should think that a great benefit would be conferred on the country, Every thing would of course depend upon the way in which such establishments were conducted.

Do you consider it would be essential in the adoption of any such method that the schoolmasters who were undergoing that preparation should be connected and in union with some large school similar to the central school of your society?—Previous to their taking charge of a school, I conceive that practice in the management of a large number of children is absolutely necessary for them; without this they can never be competent.

When you speak of three years as being a desirable period for such persons to be in preparation for the profession of schoolmaster, what part of that three years, speaking generally, would you wish to be applied to the experimental teaching by such teachers of a large school?—The first three months and the last three; the first three months in order to ascertain; previous to any large expenditure of time and money, whether the candidate possess native aptness to teach, and ability to govern numbers; the last three months to impart a readiness in communicating what he has acquired. I speak merely of actual practice in the school-room. The science of teaching is a branch of study to which attention should be directed during the whole of the third year."

THE EDUCATOR.

EASTON, PA., SEPTEMBER 24, 1838.

The following observations of the eclipse, which occurred on the 18th inst. were made from the cupola of La Fayette college. The time mentioned here, is mean solar time or true clock time, ascertained by observation.

Latitude of the college	40d. 39m. 40s.
Eclipse began	3h. 13m.
Ring formed	4h. 30m.
Ring broke	4h. 33m.
Eclipse ended	5h. 44½m.
Whole duration of Eclipse according to observation	2h. 31m. 30s.

During part of the time the heating power of the Solar rays was too small to produce combustion by the burning glass. The ring formed most beautifully. It appeared to our eye somewhat broader on the upper than on the lower disk of the sun. A strict examination did not enable us to observe any stars during the observation. The day was very favourable, not a cloud being visible during the time of the eclipse, although the whole morning had been very dull and over cast.

Fourth Annual Report on the Common Schools &c. of Pennsylvania, by the Superintendent.

In our last we endeavored to explain to our readers, the plan for educating male teachers, which, in the peculiar circumstances of Pennsylvania, we consider best fitted for accomplishing the end in view. While this plan retains all the essential features of the Prussian system, it is not only more economical than the entire adoption of that system would be, but harmonises infinitely better with the existing Institutions of the commonwealth. In the absolute monarchies of Europe, as we have elsewhere remarked "there is policy perhaps, in separating the education of the people from that of the privileged classes, that the information imparted to the former may be suited to their circumstances; but in a Republic the policy is directly the reverse. The political equality of all the citizens being recognized, not only must their right to obtain for themselves equal mental cultivation be conceded, a concession nominally enjoyed, even under despotisms, but the educational establishments must be so constituted, that, to a certain stage of progress, the whole of the citizens shall be educated together, and that every facility shall be afforded to indigent talent for sharing in the advantages of seminaries, devoted to the higher branches of literature and science." The plan which we advocate is based on these principles. It does not contemplate "two degrees of education," "one which shall be free" and another "which shall not be wholly free," one for the poor and another for the rich, but it aims at bringing the means of a good education within the reach of all who are willing to exercise the least selfdenial for securing it to their children, while by increasing the emoluments of the teacher through the contributions of the many, it renders the popular education such, that the richest citizen shall not be able to educate his children better than in the public schools. It does not propose to separate the educational establishments into two great branches, the Primary and Secondary schools and the Practical Institute on the one hand: and the Academy, College and University on the other, but to abolish the invidious distinction between free schools, and schools in which fees are exacted and instead of two separate courses of education to establish one continuous and uniform system.

In proposing plans for the education of teachers, it must however, be borne in mind, that from the peculiar circumstances of America, a considerable proportion of the number belong to the other sex. This seems to have been unaccountably overlooked in the report of the Superintendent. He adverts indeed to the unjust difference which prevails in some counties, between the salaries of male and female teachers, and pays a merited compliment to the latter, at the expense of the former, stating it "as an indisputable fact, that in the same number of male and female teachers, the greater portion of incompetency will be found among the males." But he never once alludes to any special plan for educating female teachers; either intending them to share in the advantages of the Practical Institutes and contend for the honors of graduation with the farmers, mechanics, merchants, manufacturers, surveyors and engineers, which these establishments are to send forth; or supposing their natural sagacity to be such that they will be a match for the other sex, even, although denied the advantages of colleges and institutes.

So long however as the proportion of female teachers continues to be what it is at present, that system is radically defective, which makes no provision for their education. In addition therefore to the measures suggested for educating male teachers we would strongly recommend the establishment of two or more seminaries for the education of female teachers. The instruction given in these seminaries ought we think, to be similar in its leading features to that which we have already described; special provision being made for teaching those branches of industry which belong peculiarly to the sex. Attached to the seminaries, there ought to be model schools for practising the art of teaching, and in general, the same methods should be adopted for training the female teachers as we have recommended in the case of the males. Massachusetts has already two establishments of this kind, the Ipswich Female Seminary, and that recently established at South Hadley, under the title of the Mount Holyoke Female Seminary. Neither of these however exactly realizes our idea, as no adequate provision is made for training the pupils in the art of teaching.

In examining the Superintendents plan for educating teachers, we deemed it fair to consider it in what he regards as its most favorable point of view, and to direct our arguments against the Practical Institutes, rather than the temporary expedient which he suggests for supplying the immediate wants of the system. Before concluding these remarks, however, we shall advert to the modification of his plan to which we refer. Toward the end of that section of his report which treats of the improvement of teachers he proceeds as follows. "The present position then is immediately to establish two seminaries, exclusively for improving the present generation of

teachers, which shall by degrees rise and widen into Practical Institutes such as have been described, after this temporary purpose shall have been accomplished." * * * "The mode of instruction should be by lectures, with subsequent examinations, recitations in classes, model schools, &c."

* * * "The sciences taught, might be Grammar, Geography, History, Mathematics, Chemistry, and Mineralogy, Natural History and Botany, Moral Philosophy, with the Evidences of Christianity, &c. After remarking that these branches are not to be taught, in the ordinary manner, but that instruction in them, is to be coupled with directions for the best manner of imparting them to others, he proceeds. "In this way, the correct principles of the classification of pupils, the modes of stimulating industry, and rewarding merit, the best kind of school books, the use of the blackboard, and other school-room aids, could be made known, *and in six or even three months a teacher of the most limited qualifications, but possessing ordinary intelligence, be improved into a highly useful instructor.*" This modified plan, and the results anticipated from it are of so extraordinary a nature, that we have been careful to state them in the words of the Superintendent. They fairly transcend our comprehension.——Grammar, Geography, History, Mathematics, Chemistry, Mineralogy, &c. &c., taught simultaneously in three months, and so taught as to fit the Student for imparting his knowledge to others! A Teacher of the most limited qualifications, if possessed only of ordinary intelligence initiated into the whole mystery of Schoolcraft, and improved into a highly useful instructor in six or even three months! No metamorphosis described by the Poet, is comparable to this. The wonders of Animal Magnetism, are in comparison, matters of every day occurrence. If even in their Chrysalis state the Practical Institutes effect such wonders what will they not achieve when they have attained the perfection of their being?

Speaking seriously we deprecate the employment of this expedient, more earnestly than we did the former. If any thing is calculated to bring Teachers Seminaries into contempt and to prejudice the public mind against them, it is their establishment on such principles as the above.—Every such experiment, every attempt to accomplish in three months, what requires as many years, must necessarily prove a failure, and every such failure enhances the difficulty of establishing Seminaries on right principles. The public mind subsides into indifference, believing every thing done, that is necessary to be done, or is roused to open hostility, by the disappointment of the groundless hopes, which it had been led to cherish. While therefore we approve of admitting the present Teachers to the Seminaries during the season, when the Common School are vacant and holding out every encouragement to induce their attendance, we would regard this merely as temporary expedient and simultaneously with it prosecute energetically the work of preparing thoroughly qualified Teachers.

In commencing our remarks on the superintendents report we stated it as our purpose to confine ourselves to the points in which we differ from him in opinion. To this purpose we have adhered, commenting on his plans with the same freedom with which in his report he has examined ours—We state this to prevent misapprehension. In our first number we commended the report as exhibiting evidence of great and laborious research, and as breathing throughout a spirit of expansive liberality. Our opinion of the report is in these respects unchanged—We regard its publication as of high importance to the cause of Common school education. Had we not done so we never should have devoted so much time and space to the examination of what we conceive to be its errors. As we remarked in the outset, we have no interest to serve, no prejudice to gratify. Our single desire is, to see the common school system freed from every imperfection, and placed on the firmest basis. From these motives we have scrutinized the report, and wherever we have been compelled to differ in opinion have with all plainness stated the reasons of our dissent. One or two of the particulars which we enumerated as defects of the common school system still remain to be noticed. These however we shall consider under separate heads. We take leave of the report with expressing our earnest wish that the great questions which it discusses may receive the attention which they merit, and that the decision of the public may be such, as best to promote the interest of that cause which the superintendent is, we verily believe, as desirous as ourselves to advance, how much soever he may differ from us in regard to the means of its advancement.

We have inserted in our columns the remarks of "the son of a clodhopper," not because we exactly agree with them; but rather because we fear that they are the sentiments to a small extent, of the agricultural population, in some parts of our country; and because we wish to refute them.

We admit and maintain that Education ought to fit its subject for the station he is to occupy; and whatever be its pretensions, all that does not effect this, deserves not the name. Consequently, if to plough or drive team &c. were all that a farmer would ever be called upon to perform, it would indeed require no literary instruction to make a good farmer. The mere drudgery of physical labor can to a large extent, be performed by a horse or an ass, an ox or a mule; and the mere driving of the animal requires little more intelligence than the brute himself posesses. If American farmers were the *property* of a few noblemen, to be bought and sold, like the Russian Serfs, with the soil on which they grew, why then, let them be educated like other asses; to pull or hold back, to keep silence or to bray, at the proper signal. If the tillers of our soil exist not to be themselves free and happy to the utmost possible extent, but to move matter under the direction of men who have minds, and for the benefit of the latter, then they need almost no intellect of their own. If like the unhappy German boors of the last century, they were a merchantile article, and could be sold to fight the battles of a foreign prince or to labor on his soil; "the son of a clodhopper" is not far wrong. But if these are foreign ideas and also rather antiquated even in Germany and Russia—if American farmers occupy relations in society most materially different from the peasantry of Europe, these reasonings and calculations cannot be admitted.

Or again, even if the *getting* of money and the *keeping* of it, were the only two virtues there might be some plausibility; or rather some force in the remarks. But as *getting* money and *keeping* it, have not yet been formally and legitimately admitted to absolute supremacy, by the code of American morality: and as American farmers are not simply and only living machines intended for the sole purpose of making corn and wheat grow, we cannot allow any solidity in the remarks; at least, any correctness in the general results.

The reasons are obvious. Our farmers for the most part own, *in fee*, the soil they till. They have no man above them to direct them *how* to work—no intermediate agency between that which made the soil and that which cultivates it. They are not simply operators taught to do, mechanically, a specific branch of a complicated work; but workmen who have their eye and hand upon each and every part of the complicated system of operations, whose result is the means of human subsistence and enjoyment. They are intermediate creators of human beings, for it is well settled in the science of political economy, that as the means of subsistence are, so is the population of a country. The cultivation of the soil is the primitive art, involving the principles of all other arts and constituting the grand basis of the whole. A knowledge of the principles, therefore there must be some where, or no certain results can be depended on.

Besides, the farmer is a member of civil society and has his civil duties to perform. He is a part of the sovereignty which governs the nation and consequently, if he be ignorant of the great moral truths which form the basis of civil government, he cannot intelligently perform his part in conducting the affairs of the commonwealth. Let the farmers of Pennsylvania be all such men as "the son of a clodhopper" seems to contemplate and who then will govern the State! Manifestly, a few scores of educated men: and most likely those very men whose education has given them power, without moral principle to direct its use: men who will seek their own interest at the expense of the community. If farmers are to be all ignorant, either they cannot be sent to the Legislature or if sent must be the tools of designing and well informed and perhaps unprincipled men. Their legislation will of course, be such as their *managers* will have it. These *few* will so manage the ignorant *many*, as to keep them ignoramt. They will see that education be dealt out to the many, of just such a caracter and to such an extent as to fit them to be and continue mere *tools*: whilst they will find means to educate the few in the higher branches so as to keep the others away below. Whereas if the agricultural community shall assert their rights and lay open the higher branches of education to their own sons and bring themselves up to the dignity and grade of intelligence which they ought to arrive at and maintain, they will all become as many—very many already are, the main producers of intellectual wealth, as well as of physical.

But, to decend to a minor consideratien, the moneyed interest of the farmer is largely dependent on his intelligence. Improvements in agriculture are much needed. Ninety bushels of wheat have been produced on an acre; it may be done again. Science has wonders to work here as well as elsewhere. The application of manures, vegetable and mineral, is but imperfectly understood. What does not Pennsylvania owe to the few scientific men who organised the Philadelphia Agricultural Society—who introduced plaster and clover into common use? The scientific farming of Judge Peters has blessed the State a hundred fold more than his law learning. To his exertions largely is the country indebted for the rising greatness of Pennsylvania, and the increasing reputation of the agricultural population of the whole land. As auxiliary to the refutation of "the son of a clodhopper's" observations, we invite the attention of all who feel disposed to fall in with them to the following:

REMARKS ON THE AGRICULTURAL PERIODICAL PRESS.

We have been most agreeably surprised, since the commencement of our editorial labors, at the number and character of the periodicals devoted in whole or in part, to terraculture. We had previously received the Farmer & Gar-

dener, of Baltimore, which is a continuation of the American Farmer. But being obliged, by our undertaking, to look after matter, we ascertained the names and localities of some other papers. We invited exchanges with a few. Others invited us to exchange. We feel perfectly overwhelmed with matter. We feel, when we look at our six or seven empty columns and at the pile of material before us, pretty much as the little boy does in a toy shop, when he looks at his shilling; or a little girl in a confectionary. Not indeed—beg pardon—because we have to choose among a thousand trifles. Our point of comparison, is simply in the dfficulty of making a selection. Our exchanges contain so much sound common sense matter, combined with deep science and expressed in strong and manly style, that we feel introduced into a new world. We are carried back to the days when we turned over many a broad acre of the rich glebe of our native Pennsylvania—When we spaded many a rich plott of garden under the eye of the maternal gardener, who taught us the primitive art—or swung the chopping axe to the prostration of many a sturdy oak in our western woods; and we involuntarily exclaim, "Oh the days when we were young"—had there been such means of mental elevation then we should doubtless, have been still at the plough-handle, the spade and the axe. In truth it has brought us back to the soil whence we were taken, and confirmed our old conviction, that terraculture is the parent of all the arts and all the sciences; and consequently that as man verges toward the perfection of his being, will the primitive art attract his attention and fix his affections.

The number and character of these papers we have said, astonish us. Allow us to mention one feature of their character, which we would like to see copied. They are not vehicles of slander. They do not, I presume, periodically bid farewell to all rules of decency and morality, and traduce and vilify the best men in the land.

But now the circumstance which gives us peculiar pleasure, is to know that so many periodicals and of such an intellectual and scientific and practical grade, can be and are sustained. This proves that the cultivators of the soil are *rising*—rising fast toward that lofty ground; that commanding eminence, to which we doubt not they are destined. This calls our attention to the subject of:

THE EDUCATIONAL PERIODICAL PRESS.—We wrote to Europe and by a loss at sea have been disappointed. Our expected periodicals have not been received. We looked around us in our own country, but where is its educational press? The American Annals of Education and the common School Assistant, are all we can find. Mortifying fact! And especially when we consider that the former valuable paper is laboring hard for life! One of the most singular phenomena now above our horizon is the fact, that in an age when great effort is making on the subject of education and almost every state in this extended union, is eagerly enquiring into the subject with a view to organize a system for itself; and each feels exceedingly embarrassed as to many points of great difficulty, there is not one well sustained periodical in the land devoted to it. In Pennsylvania, where our system is very defective and in the peril, because of its effects, and where the Legislature have been officially appfised of the necessity of making changes, we happen to know, that *many of her Legislators refuse to read a paper on Education.* There is a positive unwillingness to study the subject. A kind of dread seems to have come over the public mind, lest they should acquire a knowledge of facts and principles; which yet many seem impressed with the idea, are important to the public weal. The eclipse of the sun which will be visible this afternoon can be accounted for by the astronomer; but as moral astronomers, we are unable satisfactorily to account for these contradictory appearances. The public *appear* to be somewhat aroused on the subject of education. The servants of the public have said and written much about it; and admitted that they feel great practical difficulties; and professed a desire to understand it; but still Educational periodicals are scarcely known at all. The profession which teaches all men to read, has scarcely a paper in circulation and can find no readers. We confess ourselves at a loss to account for this, and should be glad if some correspondent, versed in the philosophy of mind would lend a helping hand. Why is it that whilst every department of the public interests, has its well established periodical press, the cause of education is without a single one? Can it be for want of talent in the educational corps? Is it for want of faithfulness to ourselves, in not *pressing* our cause before the public? Or is it for want of taste in the American public, that whilst Europe, and especially Germany, teems with educational papers, such are scarcely known on this continent? Who will solve the problem?

[Previously to receiving the following we had prepared the above remarks on the same topic. We insert this auxiliary with great pleasure.]

For the Educator.

MESSRS. EDITORS.—A certain individual, who styles himself "the son of a clodhopper," has been endeavoring to prove that farmers,—the bone and sinew of a country,—require no farther instruction than will enable them to perform the drudgery of a farm.

I, myself, am the son of a farmer; but I am far from coinciding with his views on the subject of education; and am persuaded that every honest cultivator of the ground will feel indignant at any attempt to circumscribe his knowledge within the narrow limits of his own calling. It is on the intelligence and industry of the farmers, that all our hopes of national prosperity depend. Keep that useful class of men in a state of ignorance and where would be our distinguishing characteristics as a nation? By whom would our free institutions be upheld? Where would be our wealth? Where every thing that constitutes a people prosperous and happy? "Clodhopper" thinks, from his manner of boasting, that he carries demonstration in every line—he talks about "pith" and "argument," as if he fully believed, he was driving the ploughshare of reason, through every old farmers brain. If he intends that *pith* shall be used in the botanical sense of the word, I acknowledge he has plenty of it; but in regard to his *arguments*

> "They fall like an inverted Cone
> Without a base to stand upon."

The manner in which this Knight of the sod attempts to defend his side appears very plausible and calculated to mislead such as have no more brains than himself. But every farmer, who has been accustomed to plough in a straight line, will immediately perceive, that he does not follow his nose in pursuing his argument. He comes out all on a jump, full-booted for his task and after having called the attention of his readers, he asks "how much brains it takes to make one of their kind? A very sage question and sagely asked. Every person should guage his brains by the difficulties of the occupation which he intends to follow, in order to ascertain, whether he be capable to perform its duties. He next proceeds, with a few preliminary remarks, to lay down two general principles, on which he may constitute an argument. That is the logical mode of proceeding. There can be no structure without a foundation. But it must be remembered, that it is one thing to lay a foundation and another to erect an edifice. The edifice should always be made to suit the foundation, otherwise it cannot stand. "Clodhopper" lays down sound principles, such as cannot be overturned, viz. 1st "It is unwise for an individual or a nation to spend money where it is not needed." 2nd "Every man ought to be fitted as early as posible for the station of life he is to occupy; the business he is to pursue for life." These are sound and irrefragable principles. But in what manner he argues from them, that education is unnecessary for farmers, I cannot perceive. He seems to proceed on the assumption, that money spent on education is lost;—that farmers and consequently every class of men, are nothing superior to the other animals;—that all their interests are centred in this transitory stage of being;—that they sustain no relations to any but themselves and their instruments of labor;—that they are born to live and die without ever reflecting on their origin and destiny;—and finally that the narrow sphere of each man's immediate calling embraces every object of pursuit and circumscribes all the energies of the mind. Such a doctrine would tend to send the soul to the dust and deprive man of every thing, that distinguishes him from the inferior orders of creation. With the hope of resuming the subjeet on a future occasion, and showing the farmers who may favor me with their reading, that education is essential to their happiness, as intellectual, moral and social beings; and that it procures wealth and general prosperity, I subscribe myself,

THE SON OF A FARMER.

AN EXAMPLE FOR YOUNG MEN.

[The following sketch of the early struggles of the boy BOWDITCH with the disadvantages of fortune, is abridged from the eulogy delivered by Daniel Appleton White.]

Soon after removing to Mr. Ward's store, he was favored with the friendship of the Hon. Nathan Reed, who then kept the apothecary's shop in Salem. Mr. Reed, himself a lover of science, perceiving his insatiable thirst for knowledge, offered him free use of his books, among which were a number of valuable works in mathematics, astronomy & natural philosophy. This was a most welcome privilege, and he improved it to the fullest extent. He felt the absence of scientific books, as a great impediment in the way of prosecuting his beloved studies to his own satisfaction. Every thing which persevering industry and labor could do to remove this impediment, was done by him. He copied, in whole or in part, many of the volumes which he was able to borrow or consult, perhaps with the double view of possessing the works, and fixing their contents more deeply in his mind. There are now in his library twelve folio, and fourteen quarto volumes of manuscripts, from his own pen, including several volumes of original matter, written at a later period. No one, without actual inspection of these volumes, can form a just estimate of his prodigious labor and diligence in producing them. They appear to me among the most astonishing monuments of human industry, which I ever beheld. The first, in order of time, of these folio volumes, bears the date

of 1787, when he was fourteen years old, and contains a long treatise on algebra, another on geometry, and a third upon conic sections. This was the year in which he studied algebra, and he had no other way of owning the book but by transcribing it. Two other folio volumes, the first and second of those which he denominated commonplace books, comprise together over twenty-three hundred pages, each page containing about fifty lines, written in his neat and close manner.

But how, it will naturally be asked, could any young man, situated as Mr. Bowditch was, find time for the successful prosecution of such profound mathematical and philosophical studies and labors? He passed his days in a merchant's store, ordinarily engaged at business from morning till night, and exposed to all the temptations and diversions, which usually beset young men in a populous place. How then could he find time for accomplishing such incredible undertakings? The answer ought to be given distinctly and fully, for it presents his example in a most prominent view, for the admiration and instruction of all young men, who are capable of catching a particle of his spirit. To all appearance, certainly, he had no time for such undertakings.—Most other persons, in his situation, would have had none. Many would not have found time for half the business which he performed, and some would have found no time for anything useful. It depends very much upon our own determination and resolution, how far time shall be truly time to us, or mere duration. Mr. Bowditch was determined to make it, if possible, more than time to him. He had the sagacity and industry to create time for himself, and to redoudle its value, by his manner of using it. He rescued the bright morning hours from the grasp of sleep and indolence, and devoted them to those abstruse researches, which required uninterrupted leisure, and the renewed vigor of his faculties. He guarded the calm hours of evening from the intrusions of frivolity, and secured them for his own noble purposes. He gathered up the broken fragments of time, which every day scattered around him, and made them more productive of knowledge to his mind, than the entire day was to others. Public holidays, even, were given to study, or rather, such days were no holidays to him, without study. Not a moment of his time was wasted upon selfish indulgencies, or artificial excitements of any kind. Narcotic fumes never mingled with the atmosphere which he choose to breathe. Idle companions, and lounging resorts, had no allurements for him. As for dissipation and vice, they fled from his presence. His perfect simplicity and temperance, in all things, demanded no sacrifice of time for his personal wants or gratifications. His habits of life were formed with a view to the economy of time, as well as the promotion of health and intellectual vigor. Avoiding fashionable and general society, he enjoyed the free intercourse of friends and relatives, which is the appropriate sphere of our social duties, and which refreshed his spirits while it gratified his affections. The discharge of his social duties, intermingled with exercise, was always to him a source of enlivening and delightful recreation. The precious hours which he thus gained, were multiplied by his intense application and diligence. Whatever engaged his attention, to that he gave his whole soul, with an ardor and steadfastness which overcame all difficulties, or turned them into advantages.

Such was the manner, and such were the means, by which young Bowditch was enabled to find time for the prodigious labors of his mind and his pen, and for the wonderful acquisitions which he made in science and learning. Such was the magic, by which he converted his ship-chandlery store into a college, and gave himself an education, worthy of the honorable diploma, which, a few years after, was conferred upon him by our most distinguished University; an act of discriminating justice, which afforded him, at the time, as much delight as surprise, and which now effects still greater honor upon the University.

TERRACULTURAL.

From the Maine Farmer.

CLOVER MANURE FOR WHEAT.

We cut the following from the *Hagerstown Torch Light*. We recommend it to the attention of farmers, and desire the attention of some on the subject.

The wheat crop is the most important of all crops to the farmer. A man who has one hundred acres of cleared land, of common quality, ought to raise on an average, *one thousand bushels of merchantable wheat*, and also rye, corn, oats, and potatoes, sufficient to defray the expenses of carrying on the farming. The wheat crop should be a clear gain.

Don't startle at this, farmer. A man who has a farm of one hundred acres of cleared land, can yearly put forty acres of it in wheat; and if the land be in order as it should be, and as every farmer may have it, every acre of the forty will give twenty-five bushels, amounting altogether to one thousand bushels. I shall now show how land must be farmed, in order to produce in this way. Never break your land before harvest and stir it after, as is customary with many farmers. Much ploughing impoverishes land, and is productive of no good effects. Your wheat ground must be heavily set in clover, and broken up after harvest with three horses, when the seed in the clover is ripe. By thus turning down clover after harvest, when the seed is ripe, it will never miss coming up in the spring, which is frequently the case when sown in the spring with seed. You also save between forty and fifty dollars worth of seed annually, which it would take to sow your ground. When the clover is ploughed down after harvest, before you seed the field, you must harrow it lightly the way you have ploughed it, in order to level the ground, and prevent the seed from rolling between the furrows and coming up in rows. Never plough your seed in with shovels, nor harrow it across the ploughing, when you have turned down clover after harvest; est you raise the clover, but always harrow it in by twice harrowing with light harrows, the way you have broken up your ground. Many farmers have ploughed down clover once, and finding that their crop was not bettered by it, but injured, as they believed, have never attempted it again. This is almost invariably the case the first time clover is ploughed down after harvest, especially if the fall be dry, and the winter frigid and close.

In turning clover down you must necessarily plough the ground deep, and the first time you do it you turn up the clay, which being unmixed with any sort of manure on the top, is in a bad state to sow wheat on. The wheat after some time will sprout and come up, but will look yellow and very spindling. Its roots after some time will get down among the unrooted clover, and there will choke, and for want of moisture a great deal of the wheat will dwindle away and die. The unrooted clover, too, below, will keep the ground loose and springy, so the frost will injure the wheat not a little. But when the clover is twice ploughed down the bad effects to the wheat crop arising from unrooted clover are not experienced. You then turn up the clover from below, which was ploughed down before, and which is a manure on the top. The seed sown on it now springs up directly, and before the winter sets in it has taken deep root. The clover now turned down rots very soon, in consequence of the rotten clover turned up, which as manure always keeps the ground moist, however dry the fall. You may now go on farming in this way: every time you turn up a coat of clover, turn down one and your wheat crop will never fail, until, your land becomes so rich that you will have to reduce it with corn.

RELATIVE VALUE OF MANURES.

From the Genesee Farmer.

Since the great truth in agriculture, that manure forms the basis of all successful farming, has been more fully developed and better understood, the attention of agriculturists in foreign countries and in this, has been directed to the discovery of the most efficient articles for this purpose, and the best method of applying them. So convinced have scientific, as well as practical men, on this point, become, that on their representations, the government of several European countries have ordered extensive investigations to be made, and experiments carefully instituted, to determine several questions relating to manures, upon which farmers and experimenters were not entirely agreed.

The Prussian government, which, in every thing relating to the welfare of the people, in giving them every advantage of education, and the benefit of every improvement in agriculture, has evidently taken the lead, and in conjunction with the Saxon authorities, appointed Professor Hembstadt, of Berlin, to superintend a series of experiments, and publish the results for the use of the public. The effect which the application of night soil and urine had produced on the agriculture of Flanders, where they had been most extensively used, induced the governments of Berlin and Dresden to place under the directions of the Professor, the contents of the city drains and cesspools, for the purpose of attempting the recovery of the barren and light soils in the neighborhood of those cities. Thus countenanced, that eminent agriculturist, in conjunction with other learned men and practical farmers, commenced a series of experiments, which were carried on for a number of years, and varied in every possible way, in order to avoid all sources of fallacy. The The results of the experiments have been published by Hembstadt, and have led to extensive and successful agricultural improvements.

Professor Schubler, the writer of the most esteemed, and certainly the most able, Treatise on Agronomia, or the best method of knowing and treating every species of land, since the death of Hembstadt, has repeated and added to the experiments of that professor, obtaining the like results in almost every instance. These he has published in a tabular form, which have since passed into the hands of all the large practical farmers of Germany, and have formed the basis of instrue-

tion on manuring; in the hands of professors of agriculture, whom many of the continental governments have with great advantage established in institutions purposely formed to disseminate useful and practical truths in the art of farming. From these tables Dr. Granville, in his report to the Thames Improving Company, in speaking of the immense source of agricultural wealth which the sewers of London afford, but which is now worse than lost, makes the following statement of facts furnished by them.

If a given quantity of land sown, and without manure, yields three times the seed employed; the same quantity of land will produce—

5 times the quantity sown, when manured with old herbage, putrid grass or leaves, garden stuff, &.
7 times when manured with cow dung,
9 times with pigeon's dung,
10 times with horse dung,
12 times with urine,
12 times with goat's dung,
12 times with sheep's dung, and
14 times with night soil, or bullock's blood. Or in other words, an acre of land sown with two bushels of wheat, without manure, will produce—

6 bushels,
10 " with vegetable manures,
14 " with cow dung,
18 " with pigeon's dung,
20 " with horse dung,
24 " with goat's dung,
24 " with urine,
24 " with sheep's dung, and
28 " with night soil, or bullock's blood.

But if the land be of such quality as to produce, without manure, 5 times the sown quantity, then the horse dung will yield 14, and the night soil 19½ the sown quantity; or land that will yield without manure 10 bushels an acre, manured with horse dung will probably produce 28, and with night soil about 39 bushels of wheat per acre.

These results and multitudes of recorded experiments prove that they in no case vary far from the facts, show the immense superiority of night soil, or Flemish manure, over any hitherto employed. In addition, Dr. Granville found that some crops which yield large profits, and are so extensively cultivated in both Flanders, can only be obtained in abundance, and of the finest quality, by employing what may emphatically be termed Flemish manure in the preparation of the soil.

Another important matter in the comparative value of manures, and of essential practical interest to the farmer, has been established by the same authoritive investigations; and that is, that while night soil has produced fourteen times the quantity sown, where horse dung has yielded only ten—the proportion of the former, or Flemish manure, was, to the horse dung employed, only as 1 to 5; so that with one ton of the Flemish, a larger produce was obtained than with five tons of the best stable manure.

Dr. Granville has drawn some valuable inferences from these truths.

"In England a ton of good stable manure sells for five shillings. Now an acre of arable land in an ordinary state of cultivation in England, is manured with 20 tons of horse or stable manure every 4th year, according to Professor Coventry, and consequently entails an expenditure of £5 in that year. It then produces ten times the quantity of wheat sown. But an acre of the same land similarly sown, and manured with Flemish manure, would require only four tons of it, and which at the price we have fixed for it, (12 shillings a ton) would be an expense of £2 8s. It would then produce fourteen time the quantity of wheat sown on the acre. Supposing the produce of the acre manured with horse manure to be 5 quarters of wheat, and to sell for £15, that of the acre manured with Flemish manure, will be seven quarters, and sell for £21. The result of this comparative farming operation, therefore would be:

1st, a saving in manure of £2 12s. per acre.
2d, a surplus produce of 6 00 per acre in money.

Total in favor of night soil, £8 12s. per acre.

"Dr. Granville states, that he was assured by Mr. Smet, a great farmer in East Flanders, that a measure of wheat land corresponding to an English acre, manured with Flemish manure, produced last year 7½ sacks of wheat of the best quality. The sack contains four measures, each weighing 180 pound of 16 oz. each; consequently there grew upon the acre 5,400 pounds of wheat, or 90 bushels."

The heaviest crop of wheat we have ever known produced in this country, was the one for which Mr. Blackmore, of this county, received the premium, 64 bushels per acre. The capabilities of the soil, therefore, when put in the best condition, is little understood, or the amount of food an acre can produce, not generally known. The *science* of agriculture is yet in its infancy, however venerable and ancient the *practice* may be; and perhaps in no branch of it is our knowledge mere defective than in that relating to manures.

Experiments in producing improved varieties of Indian Corn.

Baltimore, April 6, 1838.

Judge BUEL.—In the last number of the Cultivator (page 51) I observe the following remark by the conductor:—"The idea of improving our corn by artificial crossing, is novel, yet perfectly philosophical."

Some ten or twelve years since, I instituted a series of experiments in crossing different varieties of corn, and was perfectly successful. The variety of corn named in Dr. Brown's list(page 43 of the same number) "No. 16, Pennsylvania 8 rows, called Smith's early white," was the result of one of the experiments. It was produced by what we call the *Tuscarora*, or "New York cheat," with the *Sioux* (No. 9 of Dr. Brown's list.) From the parentage of this new variety, you would naturally expect a mulatto color; but I will explain why it is *pure white*, as I go along. I had two objects in view, the one to get the large white grains of the Tuscarora on the small cob of the Sioux; and the other to produce a variety earlier than either, if posible. To accomplish my object, I planted a peice of ground, say the eigth of an acre, with both varieties, one in each alternate hill; but as the Tuscarora was known to me to be from 15 to 20 days later than the Sioux, I planted the later 15 days after the former was planted. Now the process of crossing is performed in the following manner. The variety that has the cob that I wish to retain, is used as the female, and as the tassels (male flowers) appear, they are carefully cut off and suppressed; the variety whose grain I wish to get, is used as the male, and its tassels are allowed to grow. It is unnecessary to interfere with the female flowers (the silk.) The ears of corn produced by the Sioux hills had the form and size of cob of the Sioux, but the grain was a beautiful sulphur color, and of the form of the Tuscarora, though smaller. This corn I planted the next year, and the result was, a beautiful variegation of the grains, of pure yellow and pure white, though all the grains were alike as to size and shape. The cream color had evidently returned to its original elements. I then carefully selected the white grains, and planted them the third year, and the result was the establishment of the variety called "Smith's early white."—(I do not understand how or whence Dr. Brown obtained the name of *Pennsylvania* 8 rows.)

My experiments established the fact, satisfactorily to my mind, that you can place the grains of any variety of corn upon the cob of any other variety, by the process detailed above; and that there is no object more worthy the attention of farmers than mprovements of this kind. You have only to regulate the time of planting each variety, to correspond with the time of flowering. I ought to observe, that if you do not destroy the tassels of the variety that has the objectionable *grain*, the crossing will not be so perfect, because the *impregnation* will be from two males instead of one, and consequently the grains produced will be various. The crossing is equaly important in producing the large late kinds small and early. You can get the tall Virginia corn (that is the grain of it) upon the early dwarf stalks. Indeed, you may vary it almost at pleasure. As you will perceive above, it requires three years to accomplish the object perfectly. The first year effects the crossing; the second year, certain characteristics return to their original elements, such as the color, and somewhat of the flinty quality; the third year the new variety is produced perfect—and will remain so, so long as it shall be kept distinct from other varieties.

Another experiment was combined by me with the above, viz.—the first matured ears of good form and size were always selected for seed. By this process I was able in five years to make my new variety from 15 to 20 days earlier than the Sioux, or any other variety. I had green corn on my table for some years, two weeks earlier than the hotels who obtain early corn from Norfolk. I beg to observe, that the Smith's early white has but eight rows, and the Sioux (the female parent) twelve; now to account for this. After I had produced the variety, I was still desirous of putting it upon a smaller cob; hence I planted it with the sugar corn, using the latter as the female.—The result was the eight rows. I also once took a notion to give it a red cob, and had no difficulty in doing so, by using the red cob sugar corn as the female; but I recrossed and got rid of the red cob again, because it stained the lips and fingers while eating it.

Excuse this, from an old admirer,

GIDEON B. SMITH.

SOWING GRAIN EARLY AND FEEDING IT OFF.

Schenectady, 6th March, 1838.

Dear Sir:—I have considered it important to sow summer wheat, oats, barley and peas, as early as the season will admit in the spring, that they should come forward, shade and protect the ground from becoming too dry by early drought, which often happens in May and June, sufficient

to starve and stunt the plants, and render the crop light. If this method should be departed from, I think it should be by feeding the grain by cattle before it spindles up in the spring, with a view to prevent its ripening till autumn.

I believe the reason why our oats and other grains are lighter than the same in England is, because our seasons are warmer and ripen the grain too fast.

If I were to engage again in farming, I would sow wheat the 1st of August, and when it became too large feed it down by cattle. It would then acquire large roots, and in spring would urge forward much larger plants than that sowed in September, and I suppose must produce a much heavier crop. I think this experiment worth a trial: for, I believe it is a fact, that winter wheat and rye will live for years, if fed and not permitted to spindle and seed. As the fly which deposits the egg of the grain-worm flourishes about the ordinary time that wheat is in blow, I would feed it again in April and May, or 1st June, that it should not spindle nor be in blow till about 1st August. It would then escape the fly, and ripen in September, as it does in England. The weather being then colder, it would ripen slower, and the grain be heavier, as it is in England.

It would also escape the injury called *rust*, which is a disease caused in June and July, by means of very wet and very warm weather, which feeds the wheat plants too fast, whereby they become gorged, and the little vessels injured and burst, making sores on the straw, called rust; like as men when they eat and drink too much of good things, become diseased thereby.

I would thus experiment with wheat, oats, &c. to avoid the fly. If the fly can be thus cheated, it would be for our profit, although the worm appears to be a new creation, to chastise us for disobedience.

A field of wheat of the present spring might be fenced into several parcels, and try experiments of feeding till 1st June, leaving a patch, &c.

Most respectfully, D. TOMLINSON.

REMARKS.—Wheat and rye sown early in September, generally prosper better than that which is sown later, though the former is more exposed to the Hessian fly; and we have heard of instances of the good effects of sowing in August. It has been stated, with good reasons for its support, that the fly upon early sown wheat may be destroyed by feeding off the crop with sheep in autumn, who bite off that part of the grain in which the nit or maggot is deposited. The suggestion of feeding wheat in the spring, to retard the developement of the head till the fly of the grain-worm has disappeared, is certainly worthy of attention, and merits trial. It is an undoubted fact, that grain ripening in a cool season, or cool climate, is plumper and heavier than that which ripens in a hot season or hot climate. We have evidence, that Italian wheat sown late in May, did well the last summer.—*Cond. Cult.*

From the Cultivator.

SINGULAR EFFECTS OF GYPSUM.

J. BUEL, Esq.—Sir—No doubt you are pleased to hear any remarks that will benefit the agricultural community. I therefore remark, that on Saturday the 16th of this month, we commenced applying gypsum to our corn; we commenced late in the afternoon, and only plastered about one-third of the field, which contains about 4½ acres. The ground was dry when we applied the gypsum. On Sunday, we had a very heavy shower. On Monday we plastered the remainder of the field. There was a drain led from the highway into the field, which conducted the water into it. A few perches of the land were in puddles; but when the last plaster was applied, the water had susided, but yet the ground was soft where the water had stood; in those spots we soon after discovered that the corn was evidently perished! and all over that part of the field last plastered turned yellow, ceased to grow, and now looks miserable. That part first plastered looks black, thrifty, and is twice the length of the latter! It is to me a full evidence, that gypsum applied to wet, or moist land is a damage in lieu of a benefit; and never ought to be applied to corn after a rain, until the ground gets dry and warm. It is proper to observe, that the two parts of the field are about as epual as to moistness as you will generally find on high hilly land; not any of it wet, but dry land. The odd appearance of the corn commencing at a row, and continuing through the field, is so conspicuous that people travelling by, will stop, wonder and inquire. No doubt it is generally understood by farmers, at least those who have read the Cultivator, that gypsum is a damage applied to wet, or moist land. The circumstance of the application of it, evidently proves, that it never ought to be applied, even on the dryest land, even in time of a drought, when there has been dew during the night, until the grass, if applied to mowing or pasture lands, or grain, until the dew be wholly evaporated from the earth, I should say not till afternoon, I am convinced the usual practice of applying it promiscuously' is the cause of farmers saying it will not have the same effect every year. It is common to commence early in the morning, before the wind rises, and also to escape the heat of the sun, having no consideration to the moist effect. Henceforth I shall never apply it only when the gronnd is dry and warm. I am sir, your's respectfully,

JN. SEELYE.

Sherman, Connecticut, June 25, 1838.

On Earthing Potatoes.—The general practice has been, and now is, to earth the potato crop, by making conical hills or ridges. But, within a few years, the propriety of this mode of culture has been doubted, as tending to curtail the pasture of the plant, and to expose it to greater injury from drought; and several, who have experimented in the matter, have come to the conclusion, that the crop is most productive when but partially, or not at all earthed. A French Journal gives the following as the result of one experiment made by M. de Dombale:—Eight rows were horse-hoed; some little time after they were earthed up, and when five inches high they were again earthed up. Other eight rows in the same place, and under exactly the same circumstances, were *only horse-hoed*, at the same time with the others, but received no earthing up or subsequent culture. The product of the earthed up potatoes was 1,222 lbs. of the others 1408 lbs. and in a very fertile spot, the difference was one third in favor of the latter.

Green's Straw Cutter.—Our ingenious countryman, Mr. Green, has received a high compliment, in the encomium which has been passed upon his machine by the Highland Agricultural Society of Scotland. A description of this machine was sent from Canada to the secretary, by Mr. Ferguson, who pronounced it "the easiest and the most effective cutter he ever met with—a real first rate machine." The communication was laid before the committee on machinery, who after making a machine according to the description, and sufficiently testing it, reported that they found it "to bear out all that was reported of it by Mr. Ferguson;" that "it is now ascertained, that it will cut *three times more* than the best of the common sort, and with *less force;*" and that "one person driving the machine will cut with ease five hundred weight of hay or straw in an hour." This is a high, but deserving commendation. The notice, with a cut of this machine, is published in the society's paper for June.

LAFAYETTE COLLEGE.

The winter *Term* of this institution will open on the 31st of October. Experience has taught us the necessity of shortening our terms of study and lengthening our vacations. This will make a small diminution in the charges. They will be as follows vix.

FOR THE WINTER TERM OF 22 WEEKS—Boarding, tuition, use of rooms and library, $63 00. Fuel and attendance per room, $12 00. Washing, 3cts. per piece.

FOR THE SUMMER TERM OF 20 WEEKS—Boarding, tuition &c. $60 00. Those entering any time before the middle of the term are charged full tuition, and the boarding for the actual time, —except students who have before been in the Institution; to whom no deduction is made for absence, except on account of sickness: of which the faculty must judge.

The actual college expences where two students occupy a room, fall a little under $140 00. Unless there be extravagance in the only fluctuating matters, washing and light the $136 00 will cover the expences; and if three in a room $132 00. From this is deducted the value of the student's labour in the shops, farm and garden; which of course, depends upon his diligence and capacity. In the now closing term it varies from $00 00 (for some have worked none) to $29 00.

The fees have heretofore been required half in advance. It would be much to the convenience of the establishment, and probably to many of its patrons to pay all in advance. The temptation to withhold payment at the end of the term, because of the convenience of sending the old balance and the half pay on the new account with the student when he returns, is so strong that it often prevails. A consequence is, we are not able to pay off the Professors and other imperious demands, and lay in, during vacation, the nececssary stock of materials for the next term. We are obliged to do this upon credit and of course at a disadvantage.

It is earnestly requested that written directions as to the studies of the young students be sent. Let parents or gardians always designate whether the intention is to give a full Classical course or only a business Education; and whether the student is required to work at manual labour.

Sept. 24th. 1838.

FOR SALE HERE.

Many thousands of the Morus Albus, or White Italian Mulberry, fit to set out this fall:

For 500 and upwards at 12½ cents a piece.
100 and upwards at 14.
any number under at 15.

Sept. 24th. 1838.